

### AMENDMENTS TO THE CLAIMS

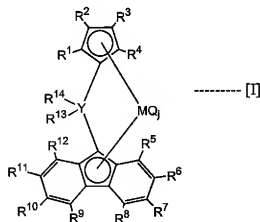
This listing of claims will replace all prior versions, and listings, of claims in the application.

#### Listing of Claims:

1. (Currently Amended) A process for producing an olefin polymer, comprising:

carrying out solution polymerization of ethylene and one or more kinds of monomers selected from  $\alpha$ -olefins at a temperature ranging from 120 to 300°C, wherein the charge mole ratio of ethylene and  $\alpha$ -olefin is in the range of ethylene: $\alpha$ -olefin = 50:50 to 99.9:0.1, in the presence of a catalyst for olefin polymerization, said catalyst consisting essentially of:

(A) a bridged metallocene compound represented by a general formula [I] described below,



wherein  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^8$ ,  $R^9$ , and  $R^{12}$  are each a hydrogen atom, a hydrocarbon group, or a silicon-containing group, and may be identical or different, or neighboring groups

may be bonded together to form a ring structure;

$R^6$  and  $R^{11}$  are identical to each other and are each a hydrogen atom, a hydrocarbon group, or a silicon-containing group, or may be bonded together to form a ring structure;

$R^7$  and  $R^{10}$  are identical to each other and are a hydrogen atom, a hydrocarbon group, or a silicon-containing group, or may be bonded together to form a ring structure;

$R^6$ ,  $R^7$ ,  $R^{10}$  and  $R^{11}$  are not simultaneously hydrogen atoms;

$R^{13}$  and  $R^{14}$  are each an aryl group, and may be identical or different;

M represents Ti, Zr or Hf;

Y represents carbon or silicon;

Q represents halogen, a hydrocarbon group, an anionic ligand, or a lone electron pair, and may be selected from an identical or different combination of neutral ligands capable of coordination; and

j is an integer of 1 to 4, and

(B) at least one or more kinds of compounds selected from the group consisting of

(b-1) an organoaluminum oxy-compound, and

(b-3) an organoaluminum compound, wherein said organoaluminum compound is

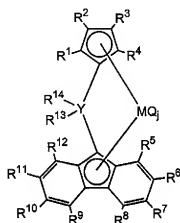
selected from the group consisting of trimethylaluminum, triethylaluminum, tri(n-butyl)aluminum, trihexylaluminum, trioctylaluminum, triisopropylaluminum, triisobutylaluminum, tri(sec-butyl)aluminum, tri(tert-butyl)aluminum, tri(2-methylbutyl)aluminum, tri(3-methylhexyl)aluminum, tri(2-ethylhexyl)aluminum, tricyclohexylaluminum, tricyclooctylaluminum, triphenylaluminum, titolylaluminum, diisopropylaluminumhalide, diisobutylaluminumhalide,

isoprenylaluminum represented by general formula  $(i-C_4H_9)_xAl_y(C_5H_{10})_z$ , wherein  $x$ ,  $y$ , and  $z$  are positive integers, and  $z$  is in the range of  $z \leq 2x$ ,  
isobutylaluminummethoxide, isobutylaluminumethoxide,  
dimethylaluminummethoxide, diethylaluminummethoxide, dibutylaluminumbutoxide,  
ethylaluminumsesquithoxide, butylaluminumsesquibutoxide, partially alkoxylated  
alkylaluminum having mean compositions represented by general formula  
 $R^{a}_{2.5}Al(OR^b)_{0.5}$ , diethylaluminumphenoxide, diethylaluminum(2,6-di-t-butyl-4-  
methylphenoxide), dimethylaluminumchloride, diethylaluminumchloride,  
dibutylaluminumchloride, diethylaluminumbromide, diisobutylaluminumchloride,  
ethylaluminumsesquichloride, butylaluminumsesquichloride,  
ethylaluminumsesquibromide, ethylaluminumdichloride, diethylaluminumhydride,  
dibutylaluminumhydride, ethylaluminumdihydride, propylaluminumdihydride,  
ethylaluminummethoxychloride, butylaluminumbutoxychloride,  
ethylaluminummethoxybromide,  $LiAl(C_2H_5)_4$ ,  $LiAl(C_7H_{15})_4$ , and  
 $(C_2H_5)_2AlN(C_2H_5)Al(C_2H_5)_2$ .

2. (Canceled)

3. (Previously Presented) A process for producing an olefin polymer, comprising:  
carrying out solution polymerization of ethylene and one or more kinds of monomers  
selected from  $\alpha$ -olefins at a temperature ranging from 120 to 300°C, in the presence of a catalyst  
for olefin polymerization, said catalyst comprising:

(A) a bridged metallocene compound represented by the general formula [I] described below,



wherein  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^8$ ,  $R^9$  and  $R^{12}$  are each a hydrogen atom, a hydrocarbon group, or a silicon-containing group, and may be identical or different, or neighboring groups may be bonded together to form a ring structure;

$R^6$  and  $R^{11}$  are identical and are each a hydrocarbon group or a silicon-containing group, or may be bonded together to form a ring structure;

$R^7$  and  $R^{10}$  are identical to each other and are each a hydrocarbon group or a silicon-containing group, or may be bonded together to form a ring structure;

$R^{13}$  and  $R^{14}$  are each an aryl group, and may be identical or different;

M is Ti, Zr or Hf;

Y represents carbon or silicon;

Q represents halogen, a hydrocarbon group, an anionic ligand, or a lone electron pair, and may be selected from an identical or different combination of neutral ligands capable of coordination; and

- j is an integer of 1 to 4, and
- (B) at least one compound selected from the group consisting of
- (b-1) an organoaluminum oxy compound,
- (b-2) a compound which reacts with the bridged metallocene compound (A) to form an ion pair, and
- (b-3) an organoaluminum compound.
4. (Previously Presented) The process of claims 1 or 3, wherein M represents Zr or Hf.